Update on reconstruction of 35t data

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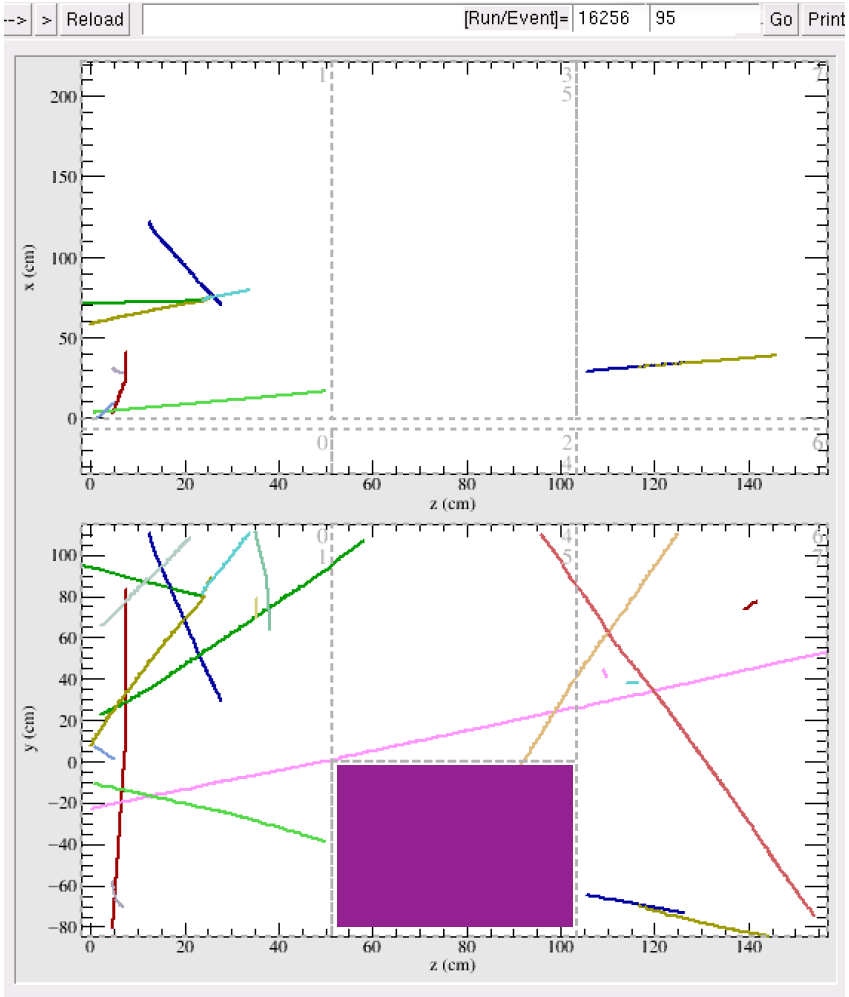
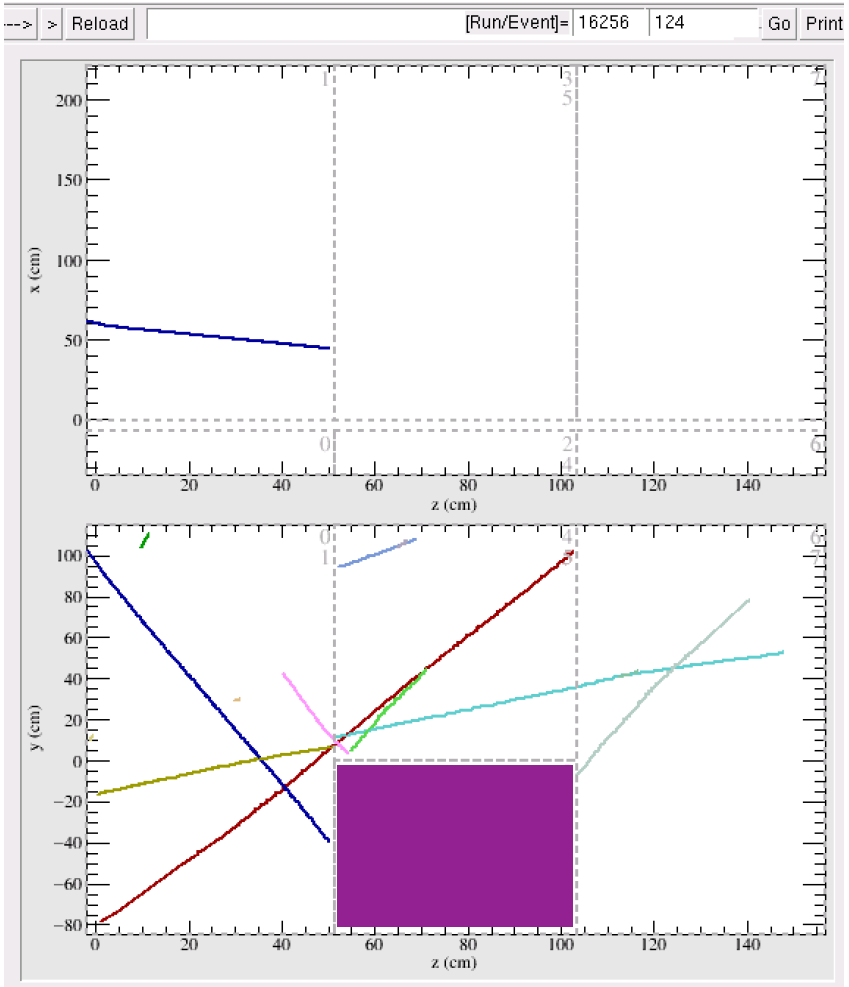
Updates since last week

- I did a few tuning on the reconstruction fcl parameters.
  - Use the correct electric fields.
  - Hit thresholds are lowered to 5 ADCs for induction planes and 10 ADC for collection plane.
  - Bruce Baller tuned linecluster to work better for MicroBooNE data and I used the same tuning for 35t data. It helps a lot in jumping gaps.
  - Counterhit is added in the standard reco chain.
- The latest reconstruction fcl file is:
  - dunetpc/fcl/dune35t/reco/standard_reco_dune35tdata.fcl

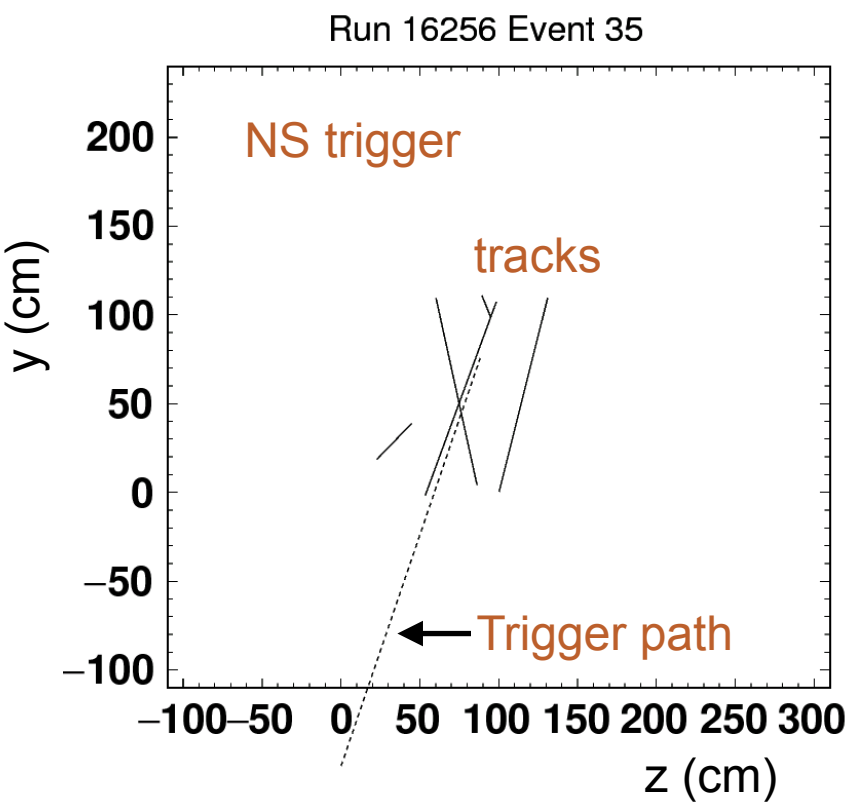
Lots of reconstructed tracks!

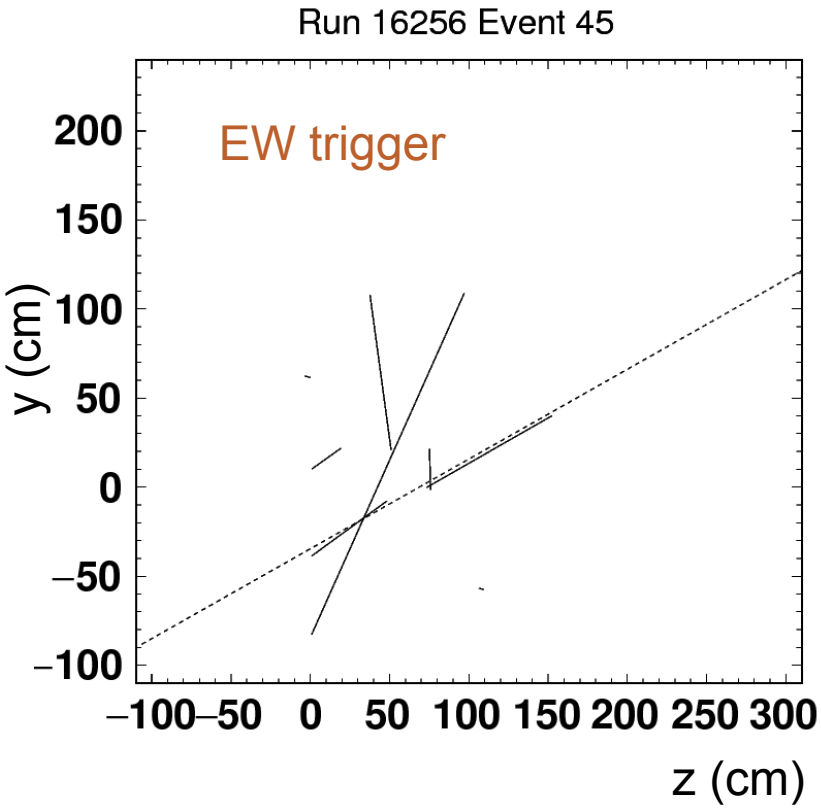




Using triplet hit matching disambiguation

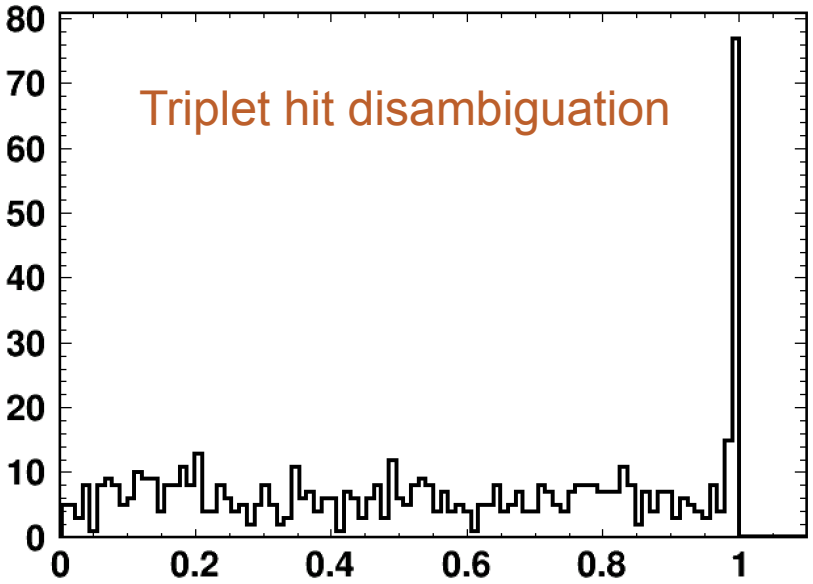
Match tracks with counter info

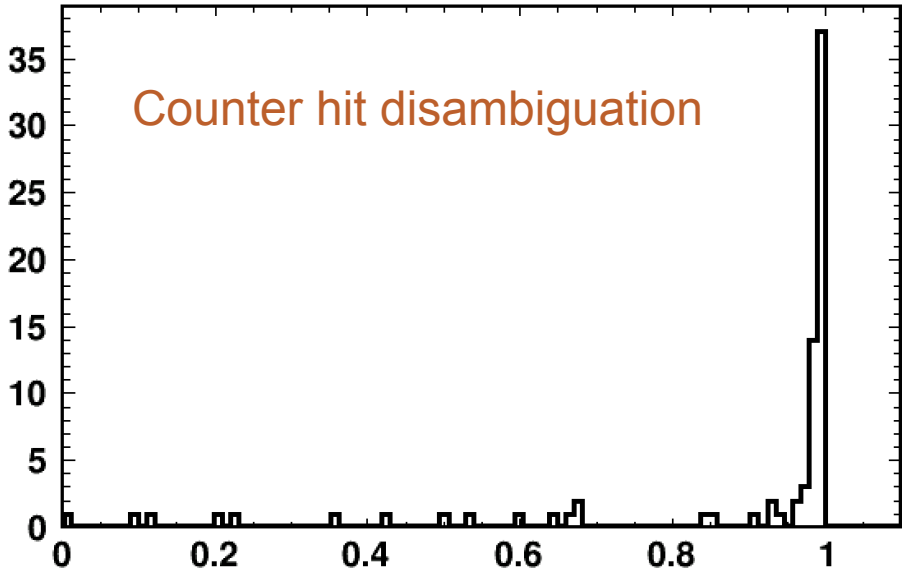




- Solid lines: reconstructed tracks
- Dashed lines: direction from triggered counter pair

Compare track and trigger directions





Dot product of track direction and trigger direction for 171 events.

Thoughts on studies

- Now that we have reconstructed tracks and t0 from counters, there may be a few studies we can do:
  - Tracking efficiency (as functions of angle, lifetime, noise level, etc.)
  - Calorimetry reconstruction
  - Gap studies